

Claims

- [1] A power saving switch comprising:
a sensor selected from a moving body sensor or a door-opening sensor;
an input part for receiving a manual turning-on signal or turning-off signal of an electric device; and
control means electrically connected with the electric device, the input part and the sensor, wherein the control means turns on the electric device and stopping operation of the sensor for a predetermined time period when the manual turning-on signal is inputted into the input part, and wherein the control means activates the sensor after a lapse of the predetermined time period and automatically turning off the electric device when the detection signal is received.
- [2] A power saving switch according to claim 1, wherein the control means further includes at least one selected from an indicator for outputting information corresponding to the turning-on and turning-off of the electric device; a sound output part for outputting a predetermined sound when the sensor detects the detection signal or when the electric device is automatically turned off; and a time setting part for selectively setting operation stopping time of the sensor.
- [3] A power saving switch according to claims 1, wherein a moving body sensor is at least one selected from an infrared sensor, an ultrasonic sensor, an optical sensor and a proximity sensor; and
wherein a pair of door-opening sensors are mounted on a door and a doorframe respectively and is at least one selected from a magnetic sensor and a proximity sensor for detecting the opening and closing of the door.
- [4] A power saving switch according to claim 3, wherein the magnetic sensor includes:
a permanent magnet mounted on the door;
a metal plate mounted on the doorframe to correspond to the permanent magnet;
control means electrically connected with the metal plate; and
a solenoid electromagnet electrically connected with the control means, the solenoid electromagnet turning on the electric device manually according to the signal input of the input part, and at the same time, magnetizing the metal plate for a predetermined time period.
- [5] A method for controlling a power saving switch comprising the steps of:
a) manually turning on an electric device by a user's use of an input part;
b) after the manual turning step, supplying electric power to the electric device, and at the same time, stopping operation of a sensor for a predetermined time period;

c) activating the sensor after a lapse of the predetermined time period; and
d) blocking supply of electric power to the electric device in order to automatically turn off the electric device by receiving a detection signal of a moving body or the opening and closing of a door from the sensor.

[6] A method for controlling a power saving switch according to claim 5, wherein the b) step further includes a step of outputting a use-status information by an indicator, and

wherein the d) step further includes a step of conversion-outputting of the use-status information by the indicator.

[7] A method for controlling a power saving switch according to claim 6, wherein the d) step further includes a step of outputting a predetermined sound through a sound output part for a predetermined time period.

[8] A method for controlling a power saving switch according to any one of claims 5 to 7, wherein the d) step includes a step of outputting sound by the sound output part without automatically blocking supply of electric power to the electric device in order for the user to press the input part, and thereby, turning off the electric device manually and stopping the sound output of the sound output part.

[9] A power saving switch comprising:

a sensor selected from a moving body sensor or a door-opening sensor; and
control means electrically connected with the sensor and an electric device,
wherein the control means automatically turns on the electric device and at the same time, stops operation of the sensor for a predetermined time period when receiving a detection signal of a moving body or an opening of a door from the sensor, wherein the control means converts the sensor into a turn-off sensor after a lapse of a predetermined time period from the automatic turning-on of the electric device, and wherein the control means automatically turns off the electric device when receiving a detection signal of a moving body or an opening of a door from the sensor again, stops operation of the sensor for a predetermined time period, and then converts the sensor into a turn-on sensor after a lapse of the predetermined time period to thereby automatically turn on the electric device.

[10] A power saving switch according to claim 9, wherein the control means further includes at least one selected from an indicator for outputting light-emitting information, character information or figure information, which corresponds to the turning-on and turning-off of the electric device, to the outside of an entrance; a sound output part for outputting predetermined sound during the automatic turning-on or turning-off of the electric device; and a time setting part for selectively setting a predetermined time period until the sensor is converted into the turn-off sensor after the electric device is automatically turned on by the

sensor.

- [11] A power saving switch comprising:
a first moving body sensor arranged on an entrance of a specific object space or on a position adjacent to the entrance;
a second moving body sensor arranged in the inward direction of the specific object space from the first moving body sensor; and
control means electrically connected with the first and second moving body sensors, wherein the control means automatically turns on an electric device installed inside the specific object space when a detection signal of the second moving body sensor is received after a detection signal of the first moving body sensor is received, and wherein the control means automatically turns off the electric device when the detection signal of the first moving body sensor is received after the detection signal of the second moving body sensor is received.
- [12] A power saving switch according to claim 11, wherein the control means performs operation in such a manner as to increment by 1 whenever the detection signal of the second moving body sensor is received after the detection signal of the first moving body sensor is received, performs operation in such a manner as to decrement by 1 whenever the detection signal of the first moving body sensor is received after the detection signal of the second moving body sensor is received, and automatically turns off the electric device installed inside the specific object space whenever the operation result is 0.
- [13] A power saving switch according to claim 11, wherein the control means stops operation of the first and second moving body sensors for a predetermined time period after automatically turning on the electric device installed inside the specific object space when the detection signal of the second moving body sensor is received after the detection signal of the first moving body sensor is received, and wherein the control means stops operation of the first and second moving body sensors for a predetermined time period after automatically turning off the electric device installed inside the specific object space when the detection signal of the first moving body sensor is received after the detection signal of the second moving body sensor is received.
- [14] A power saving switch according to claim 13, wherein the first and second moving body sensors are optical sensors, each having a light transmitting part and a light receiving part.
- [15] A power saving switch according to claim 11 or 12, further comprising:
a manual switch arranged on the entrance of the specific object space for manually turning on and off the electric device according to a user's manipulation; and

- an indicator electrically connected with the control means for outputting information corresponding to the turning-on and turning-off of the electric device.
- [16] A power saving switch comprising:
a first moving body sensor arranged on an entrance of a specific object space or on a position adjacent to the entrance;
a second moving body sensor arranged in the inward direction of the specific object space from the first moving body sensor; and
control means electrically connected with the first and second moving body sensors, wherein the control means automatically turns on an electric device installed inside the specific object space when a detection signal of the first moving body sensor is received, and wherein the control means automatically turns off the electric device when the detection signal of the first moving body sensor is received after the detection signal of the second moving body sensor is received.
- [17] A power saving switch according to claim 16, wherein the control means stops operation of the first and second moving body sensors for a predetermined time period when the detection signal of the second moving body sensor is received after the detection signal of the first moving body sensor is received or when the detection signal of the first moving body sensor is received after the detection signal of the second moving body sensor is received.
- [18] A method for controlling a power saving switch comprising the steps of:
i) automatically turning on an electric device installed inside a specific object space when a detection signal of a second moving body sensor arranged in the inward direction of the specific object space from a first moving body sensor is received after a detection signal of the first moving body sensor arranged on an entrance of the specific object space or on a position adjacent to the entrance is received; and
ii) automatically turning off the electric device installed inside the specific object space when the detection signal of the first moving body sensor is received after the detection signal of the second moving body sensor is received.
- [19] A method for controlling a power saving switch according to claim 18, wherein the i) step further includes a step of performing operation in such a manner as to increment by 1 whenever the detection signals are received in the detection order of the moving body sensors of the i) step, and wherein the ii) step further includes steps of performing operation in such a manner as to decrement by 1 whenever the detection signals are received in the detection order of the moving body sensors of the ii) step and automatically turning off the electric device installed inside the specific object space whenever the operation result is 0.

- [20] A method for controlling a power saving switch according to claim 18 or 19, further comprising a step of stopping operation of the first and second moving body sensors for a predetermined time period after the i) step of automatically turning on the electric device and after the ii) step of automatically turning off the electric device.